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Title: "Magneto-Optical responses of topological insulator thin films"

Abstract: In this talk, we discuss the optical properties of an ultrathin film of topological insulator in the presence of an in-plane magnetic field. We show that the optical conductivity exhibits a strong anisotropy due to the combination of the overlap between the surface states of the two sides and the magnetic field. This behavior leads to an effective optical activity of the ultrathin film by influencing the circularly polarized incident light. More intriguingly, we obtain an elliptic character of the reflected and transmitted lights for a range of the magnetic fields, however almost linear polarizations are obtained for a certain value of the magnetic field, which indicates that the thin film can exploit as a polaroid in reflection.